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## Patent Claims

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1. Honeycomb structure with a plurality of flexible material strips which are arranged next to one another, are connected to one another and are characterized in that the material strips have a corrugated shape with a U-shaped cross section of said essentially straight, vertical partial areas (3) and said curved, horizontal partial areas (2), and that the
- 10 material strips are connected to one another at said contact points (4) of the straight, vertical partial areas.
2. Honeycomb structure in accordance with claim 1, characterized in that the material strips may consist of films (e.g., plastic), paper, metal or composite materials.
3. Honeycomb structure in accordance with claim 1, characterized in that the material
- 15 strips are welded to one another.
4. Honeycomb structure in accordance with claim 1, characterized in that the material strips are bonded to one another.
5. Device for manufacturing a honeycomb structure in accordance with one of the claims 1 through 4, characterized in that it has said welding sections (6), by which the said
- 20 flexible material strips (9) are guided, wherein the said material strips are welded to

one another by means of a said comb-like finger system (10) by the finger system or the welding sections being laterally displaced by two sections, and a pressing-on operation between the finger and the welding section takes place, which presses two material strips onto a said heated welding wire (7), which leads to a thermal connection of the material strips.

6. Device in accordance with claim 5, characterized in that the said fingers (10) are equipped with a said heating wire (7) for welding together the material strips.
7. Device in accordance with claim 5, characterized in that both the said welding sections (6) and the said fingers (10) are equipped with a said heating wire (7) for welding together the material strips.
8. Device in accordance with claim 5, characterized in that the said welding sections (6) or the said fingers (10) may also be equipped with high-frequency or ultrasonic welding units.
9. Device in accordance with claim 5, characterized in that the said welding sections (6) or the said fingers (10) may also be equipped with laser welding units.
10. Device in accordance with claim 5, characterized in that the said welding sections (6) or the said fingers (10) may also be equipped with heated metal straps, metal elements or heating cartridges as welding units.
11. Device in accordance with claim 5, characterized in that the said welding sections (6) or the said fingers (10) may also be equipped with hot air welding units.

12. Device in accordance with claim 5, characterized in that the said welding sections (6) or the said fingers (10) may also be equipped with induction welding units.

13. Device in accordance with claim 5, characterized in that the said welding sections (6) or the said fingers (10) may also be equipped with friction welding units.

5 14. Device in accordance with claim 5, characterized in that the feeding of the honeycomb can be accomplished by means of said slide elements (8) at the said welding sections (6), but also with finger systems which move into the completely welded honeycomb and subsequently perform a feed motion.

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